In-Situ Preservation and Long Term Monitoring of the Clarence (1850) and James Matthews (1841) Shipwreck Sites

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Develop *in-situ* preservation protocols for the long-term stabilisation of significant UCH sites at risk.

Develop general guidelines for the long-term monitoring of sites.

Contribute to the development of a sustainable, cost-effective and strategic national approach for shipwreck management.

Make significant contributions to current international *in-situ* preservation protocols.
Two very different and innovative *in-situ* preservation techniques were applied and investigated in this longitudinal study for comparative analysis.

- *Clarence* (1950)  
  - colonial trader

- *James Matthews* (1841)  
  - ex-slaver
Outline

- *In-situ* preservation strategies for *Clarence* and *James Matthews*.
- Long-term conservation monitoring programme.

*Clarence Nov 2012*  
*James Matthews 1976*
Conservation Surveys

Corrosion survey of iron features

pH profiles, Umax & wood ID of structural timbers

Physico-chemical and microbiological analyses of sediments
Clarence Reburial 2012

May 2012 – before reburial

June 2012 – before reburial

May 2012 – after reburial

June 2012 – after reburial
In Situ Preservation Strategy
November 2012

tarpaulins = 3 x (7m x 14m)

shade cloth = 10m x 25m
Shade Cloth Preparation
Shade cloth deployment
PVC Tarpaulins
In-Situ Preservation Experiments 2005

- Polymeric sand bags
- Sediment trapping - artificial seagrass
- Sediment trapping – shade cloth
- Cofferdam – road crash barriers
In-Situ Preservation Strategy
HELP WE'RE TRAPPED THE FISH!
Reburial and Monitoring

- Good material preservation in sediment = anoxic, reducing, near neutral pH conditions, low porosity, organic content and microbiological activity.

- Maintain long term sediment coverage >50cm

- No adverse effects on wreck material and/or micro-environment.

- Long-term monitoring of these parameters is a critical component of the overall management plan.
High levels of organic matter = high levels of nutrients = increased biological activity

How will this effect the wood and metals?
Sacrificial Samples

on-site wood

CAST IRON MILD STEEL

on-site iron alloys
Sample Recovery
Thank You